

1 – 37. (canceled)

38. (new) A method of manufacturing a hardfaced plate by applying a cladding to a surface of a substrate by arc welding, the method comprising:

moving the substrate in a given direction relative to means for mounting a welding gun;

mounting the welding gun relative to said substrate in a direction generally transverse to said given direction of movement of the substrate; and

feeding a continuous arc welding wire from the welding gun to the surface of the substrate, wherein the welding gun feeds the welding wire to the surface of the substrate in the direction generally transverse to said given direction of movement of the substrate, and the substrate is cylindrical and is rotated in the given direction about a generally horizontal axis with respect to the welding gun.

39. (new) A method according to claim 38, wherein the welding gun is mounted at an acute angle to the surface of the substrate so as to clad said welding wire to said surface from one side of the given direction of movement of said substrate.

40. (new) A method according to claim 39, wherein the cladding applied to the surface of the substrate is in the form of a continuous weld bead or a plurality of side-by-side weld beads.

41. (new) A method according to claim 40, wherein the method further comprises monitoring a profile(s) of the weld bead(s).

42. (new) A method according to claim 41, wherein said monitoring is carried out as part of a procedure to maintain a desired profile for the cladding.

43. (new) A method according to claim 42, wherein information from the monitoring is used to adjust at least one of a welding current, an arc voltage, speed of movement of the welding gun, speed of movement of the substrate, a welding gun angle, and a stickout distance.

44. (new) A method according to claim 38, wherein the method further comprises moving the welding gun relative to said substrate in the direction generally transverse to said given direction of movement of the substrate.

45. (new) A method according to claim 44, wherein the method further comprises oscillating the welding wire transversely to the direction of movement of the substrate and/or the direction of movement of the welding gun.

46. (new) A method according to claim 38, wherein the method further comprises feeding the welding wire to the surface of the rotating substrate at a level below an uppermost level of the rotating cylindrical substrate.

47. (new) Apparatus for manufacturing a hardfaced plate by applying a cladding to a surface of a substrate by arc welding, the apparatus comprising:

means for moving the substrate in a given direction relative to means for mounting a welding gun, said means for mounting a welding gun being arranged to mount said welding gun relative to said substrate in a direction generally transverse to said given direction of movement of the substrate; and

means for feeding a continuous arc welding wire from the welding gun to the surface of the substrate, wherein the means for feeding is arranged to feed the welding wire to the surface of the substrate in the direction generally transverse to said given direction of movement of the substrate, and the substrate is cylindrical and the apparatus has means for rotating the cylindrical substrate in the given direction about a generally horizontal axis with respect to the welding gun.

48. (new) Apparatus according to claim 47, wherein the welding gun is mounted at an acute angle to the surface of the substrate so as to clad said welding wire to said surface from one side of the given direction of movement of said substrate.

49. (new) Apparatus according to claim 48, wherein the means for feeding is arranged to feed the welding wire to the surface of the rotating substrate at a level below an uppermost level of the rotating cylindrical substrate.

50. (new) Apparatus according to claim 48 including further means arranged to apply the cladding to the surface of the substrate in the form of a continuous weld bead or a plurality of side-by-side weld beads.

51. (new) Apparatus according to claim 49 including further means arranged to apply the cladding to the surface of the substrate in the form of a continuous weld bead or a plurality of side-by-side weld beads.

52. (new) Apparatus according to claim 48 including further means arranged to monitor the profile(s) of the bead(s).

53. (new) Apparatus according to claim 49 including further means arranged to monitor the profile(s) of the bead(s).

54. (new) Apparatus according to claim 52 comprising additional means arranged to carry out said monitoring as part of a procedure to maintain a desired profile for the cladding.

55. (new) Apparatus according to claim 53 comprising additional means arranged to carry out said monitoring as part of a procedure to maintain a desired profile for the cladding.

56. (new) Apparatus according to claim 52 including further means for adjusting at least one of a welding current, an arc voltage, speed of movement of the welding gun, speed of movement of the substrate, a welding gun angle, and a stickout distance.

57. (new) Apparatus according to claim 53 including further means for adjusting at least one of a welding current, an arc voltage, speed of movement of the welding gun, speed of movement of the substrate, a welding gun angle, and a stickout distance.

58. (new) Apparatus according to claim 52, wherein the apparatus further comprises means for moving the welding gun relative to said substrate in the direction generally transverse to said given direction of movement of the substrate.

59. (new) Apparatus according to claim 53, wherein the apparatus further comprises means for moving the welding gun relative to said substrate in the direction generally transverse to said given direction of movement of the substrate.

60. (new) Apparatus according to claim 52 including means arranged to oscillate the welding wire transversely to the direction of movement of the substrate and/or the direction of movement of the welding gun.

61. (new) Apparatus according to claim 53 including means arranged to oscillate the welding wire transversely to the direction of movement of the substrate and/or the direction of movement of the welding gun.